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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,379

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James Edward Delves

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EXAMINER

SNELTING, JONATHAN D

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/535,379	<b>Applicant(s)</b> DELVES ET AL.	
	<b>Examiner</b> Jonathan D. Snelting	<b>Art Unit</b> 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-12 and 14-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 14-32 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

The amendments to the claims filed on October 11, 2010 have been entered into the record. Claims 1 and 19 are amended. Claims 2 and 13 are cancelled.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 3-5 are dependent on canceled claim 2. In order to further examine claims 3-5, Examiner will interpret claims 3-5 as dependent on claim 1.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-5, 8, 9, 19-21, and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mims (U.S. Patent No. 4,707,277) in view of Evans (U.S. Patent No. 2,010,538).
6. Consider claims 1 and 3-5. Mims teaches an apparatus for transferring settled and suspended solids from an open vessel (10) into a closed vessel (28), where the

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closed vessel is not open to the atmosphere, the apparatus comprising a suction line (100) which extends from the closed vessel to the open vessel via drive means (92) and a solids feed line (26) which extends from a solids outlet (proximate 38) in the open vessel to a solids inlet (76) in the closed vessel, a fluidising apparatus (22) being provided to fluidise the solids in the open vessel.

Mims does not explicitly teach the fluidising apparatus as specifically claimed. Evans teaches a fluidising apparatus comprising a flow chamber (proximate 73 in fig. 25) having a fluid inlet (74) and a fluid outlet (72), the flow chamber being configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet (via a number of means including turbulent flow at the outlet, multiple flow paths 74 and 71 combining to form one flow path 56, and the asymmetric shape of the tubes), and a transport outlet (63 and 56) for transporting fluidised material away from the flow chamber. Evans's transport outlet is situated externally of the flow chamber, directly above the flow chamber, and close to the flow chamber (see figs. 24 and 25). It would have been obvious to a person having ordinary skill in the art to modify the apparatus of Mims with a fluidising apparatus as taught by Evans in order to reduce the number of moving parts located under water in order to improve reliability and maintenance.

7. Consider claim 8. Mims teaches that the closed vessel comprises a feed vessel (proximate 80) which feeds suspended solids into a transport vessel (102) containing a fluidising unit (110).

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8. Consider claim 9. Mims teaches that the transport vessel comprises a solids outlet (32) through which suspended solids are discharged at a controlled rate along a slurry discharge line.

9. Consider claim 19. Mims teaches a method for transferring settled and suspended solids from an open vessel (10) into a closed vessel (28), where the closed vessel is not open to the atmosphere, the method comprising: drawing fluid from the closed vessel into the open vessel (via 100); operating a fluidising unit (22) with the said fluid (fluid in system of 10, 26, 28, and 100) to fluidise the settled and suspended solids; and drawing the fluid and fluidised solids from the open vessel into the closed vessel (via 26).

Mims does not explicitly teach the fluidising unit as specifically claimed. Evans teaches a fluidising unit comprising a flow chamber (proximate 73 in fig. 25) having a fluid inlet (74) and a fluid outlet (72), the flow chamber being configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet (via a number of means including turbulent flow at the outlet, multiple flow paths 74 and 71 combining to form one flow path 56, and the asymmetric shape of the tubes). It would have been obvious to a person having ordinary skill in the art to modify the method of Mims with a fluidising unit as taught by Evans in order to reduce the number of moving parts located under water in order to improve reliability and maintenance.

10. Consider claim 20. Mims teaches that the fluid is drawn from the closed vessel to the open vessel by means of a pump or compressor (92).

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11. Consider claim 21. Mims teaches that the fluid is recirculated between the closed vessel and the open vessel, so that no additional fluid is added to or removed from the system (via 88, 94, 90, 96, and 98, see column 8, lines 8-20 and fig. 3).

12. Consider claim 26. Mims teaches that no fluid other than the fluid in the open vessel (28) is used to fluidise and transport the settled and suspended solids from the open vessel to the closed vessel.

13. Consider claim 27. Mims teaches that the only fluid used to transport solids from the closed vessel to a discharge vessel (102) is the said fluid (fluid in system of 10, 26, 28, and 100).

14. Consider claims 28-32. It is considered that Mims's method is capable of operating below sea level to remove material for transport to shore, capable of removing material from the seabed for dredging or mining, capable of removing radioactive waste solids, capable of conveying material from the base of a mine shaft to the surface, and capable of conveying a material directly into the suction line of a slurry pump.

15. Claims 6, 7, 10, 14-17, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mims (U.S. Patent No. 4,707,277) in view of Evans (U.S. Patent No. 2,010,538) in view of Young (U.S. Patent No. 5,098,667).

16. Consider claims 6 and 7. Mims in view of Evans does not explicitly teach a flow meter. Young teaches a flow meter (58, 56) for controlling the rate at which solids are transferred from a first vessel (20) into a second vessel ("TO REACTOR," see fig. 1). Young's flow meter measures the rate of flow of suspended solids (see column 5, lines 40-44). It would have been obvious to a person having ordinary skill in the art to modify

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the apparatus of Mims in view of Evans with a flow meter as taught by Young in order to measure and control the flow of slurry from the open vessel to the closed vessel.

17. Consider claim 10. Mims in view of Evans does not explicitly teach means for measuring the flow rate of slurry discharge. Young teaches a means (flow meter 58, 56) on a slurry discharge line (60) for measuring the flow rate of slurry discharge ("TO REACTOR," see fig. 1). It would have been obvious to a person having ordinary skill in the art to modify the slurry discharge line of Mims in view of Evans with a flow meter as taught by Young in order to measure and control the flow of slurry from the slurry discharge line.

18. Consider claims 14-17. Mims in view of Evans does not explicitly teach valves as specifically claimed. Young teaches a valve (78), computer (100), and flow meter (58, 56) for controlling flow rate of suspended solids. Young's flow meter 58, 56, in conjunction with gamma density gauge 74 and computer 100, is a mass flow meter as described in column 2, lines 7-12. It would have been obvious to a person having ordinary skill in the art to modify the apparatus of Mims in view of Evans with a valve, computer, and flow meter as taught by Young in order to control the flow of slurry. The valve, computer, and flow meter of Mims in view of Evans in view of Young are capable of performing the recited method steps (functional limitations) in claims 14-16. Please see MPEP 2106 (IV)(B) and *R.A.C.C. Indus. v. Stun-Tech, Inc.*, 178 F.3d 1309 (Fed. Cir. 1998). Mims in view of Evans in view of Young does not explicitly teach valves and flow meters. It would have been obvious to a person having ordinary skill in the art to duplicate the valve and flow meter of Mims in view of Evans in view of Young, since it

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has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. Please see *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

19. Consider claims 22-24. Mims teaches discharging fluid and fluidised solids from the closed vessel into a discharge vessel (102), but Mims in view of Evans does not explicitly teach controlling the rate of discharge. Young teaches controlling (via 58, 56, 100, and 78) the rate of discharge of fluid and fluidised solids from a first vessel (20) into a second vessel ("TO REACTOR," see fig. 1) by controlling a valve (78) on a pipe (60) connecting the vessels so that a desired concentration of solids is discharged at a constant rate (see column 5, lines 28-37). It would have been obvious to a person having ordinary skill in the art to modify the method of Mims in view of Evans with a step of controlling the rate of discharge of solids as taught by Young in order to accurately convey a predetermined quantity of solids to a discharge vessel.

20. Consider claim 25. Mims teaches fluidising the solids in the discharge vessel (via 110).

21. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mims (U.S. Patent No. 4,707,277) in view of Evans (U.S. Patent No. 2,010,538) in view of Young (U.S. Patent No. 5,098,667) as applied to claim 17, and further in view of Gomi (U.S. Patent No. 5,796,012).

22. Consider claim 18. Mims in view of Evans in view of Young teaches flow meters, but does not explicitly state that the flow meters are coriolis or ultrasonic meters. Gomi teaches a coriolis flow meter. It would have been obvious to a person having ordinary

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skill in the art to modify the flow meters of Mims in view of Evans in view of Young to be coriolis flow meters as taught by Gomi in order to correct instrumental errors caused by a change in density and temperature of the fluid (see Gomi, abstract, lines 1-3).

***Allowable Subject Matter***

23. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

24. Applicant's arguments filed October 11, 2010 have been fully considered but they are not persuasive.

25. Applicant argues that Mims's pump 22 cannot be a fluidising apparatus/unit since applicant discloses a pump as being separate from a fluidising apparatus/unit.

Applicant further argues that neither Young nor Gomi teach the fluidising apparatus/unit as claimed. These arguments are not persuasive. Mims's pump can be considered a generic fluidising apparatus/unit. Evans teaches the specific structure of the fluidising apparatus/unit of amended claims 1 and 19, and it would have been obvious to one skilled in the art to modify the apparatus/method of Mims with a fluidising apparatus/unit as taught by Evans in order to reduce the number of moving parts located under water in order to improve reliability and maintenance as stated in the rejections above.

26. Applicant argues that the flow from Evans's nozzle 12 can only be expected to be linear, and is therefore not configured to establish a swirling or coanda flow. This argument is not persuasive. Though the flow from Evans's nozzle may have a vertical

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component, the nozzle is configured to establish a swirling or coanda flow via a number of means including turbulent flow at the outlet, multiple flow paths 74 and 71 combining to form one flow path 56, and the asymmetric shape of the tubes. Examiner attempted to emphasize this point in the rejections above.

### ***Conclusion***

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan D. Snelting whose telephone number is 571-270-7015. The examiner can normally be reached on Monday to Friday 8:00 to 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saúl Rodriguez can be reached on 571-272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. D. S./  
Examiner, Art Unit 3652  
/Gregory W Adams/  
Primary Examiner, Art Unit 3652